Spontaneous Mediastinal Hematoma Presenting as a Mass

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A 59-year-old man had undergone hemodialysis for 16 years because of chronic renal failure. The patient had taken an aspirin therapy (100 mg per day) for 4 years because of his history of brain infarction. He had a 3-week history of increasing back pain. A chest computed tomographic scan demonstrated a mass in the upper mediastinum. The mass was located among the superior vena cava, trachea, and ascending aorta. Two weeks later, magnetic resonance imaging revealed that the mass had become slightly smaller. The patient's symptom also disappeared gradually. Follow-up imaging showed that the mass had resolved completely. The clinical and imaging findings corresponded with a case of spontaneous mediastinal hematoma presenting as a mass.

Key Words: Mediastinal mass, Mediastinal hematoma, Anticoagulation therapy.

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A 59-year-old man had complained of a dull pain and dry cough that had been increasing for 3 weeks. The pain was dull and located in the right upper region of the back. The patient had undergone hemodialysis for 16 years because of chronic renal failure. During hemodialysis (three times a week), heparin had been used as anticoagulant therapy. The amount of heparin used with hemodialysis was 25 units/kg/hr. The patient had taken an aspirin therapy (100 mg per day) for 4 years because of his history of brain infarction. A chest radiograph showed a widening of the upper mediastinal shadow that was not evident on a chest radiograph taken 2 days earlier. A computed tomographic (CT) scan demonstrated a large mass in the upper mediastinum (Fig 1, *arrows*). The superior vena cava was narrowing and became crescent-shaped because of the mass (Fig. 1*A*), but no SVC syndrome developed. The mass was located among the superior vena cava, trachea, and ascending aorta (Fig. 1*B*). The patient had had anemia before, and there was no decreasing hemoglobin (9.4 mg/dl; normal range, 12.0–16.0 mg/dl). The platelet count was 168,000 /mm^3 (normal range, 150,000–400,000/mm^3); the serum creatinine was 10 mg/dl (normal range, 0.8–1.2 mg/dl); the blood urea nitrogen was 46 mg/dl (normal range, 7–14 mg/dl). No increase of tumor markers (carcinoembryonic antigen, alpha-fetoprotein, squamous cell carcinoma antigen, neuron-specific enolase). After hospitalization, an aortogram demonstrated neither feeding artery nor extravasation. A Gallium-67 scintigram showed no abnormal uptake other than the mediastinal lesion. Follow-up CT scan was optimal, but the patient had an allergic episode resulting from biodinated contrast material in the previous aortogram. In anticipation of biopsy 2 weeks later, a magnetic resonance imaging was performed and revealed that the mass had become smaller. The T1-weighted image revealed pleural effusion in the left thorax, but the mass became slightly smaller (Fig 2, *arrows*). The patient's symptom also disappeared gradually. The clinical and imaging findings corresponded with nontraumatic mediastinal hemorrhage. Subsequent follow-up T1-weighted images demonstrated that the mass had become gradually reduced in size. Finally, 1 year later, the mass and the pleural effusion disappeared (Fig 3).

The occurrence of a mediastinal hematoma almost always follows chest trauma, most frequently sternal trauma.[1] There are a few reported cases of mediastinal hemorrhage after iatrogenic injury, i.e., cardiac catheterization.[2] Nontraumatic mediastinal hemorrhage is rare, and we are aware of only one report in the English literature.[3] Although we did not perform a biopsy or remove the mass, the imaging supports the presence of a mediastinal hematoma that resolved spontaneously. The exact source of the apparent hemorrhage remained unclear; aortic dissection was excluded with angiography. Recognition of a mediastinal hematoma may avoid unnecessary interventions. The diagnosis of mediastinal hematoma is suggested by a sudden widening of the mediastinum associated with chest pain and by resolution in follow-up. Magnetic resonance imaging images show that, in the process of a hematoma changing from oxyhemoglobin into methemoglobin, both T1- and T2-weighted images change from a low or iso-signal to a high-signal intensity area.[4] In particular, a T1-weighted image shows the area

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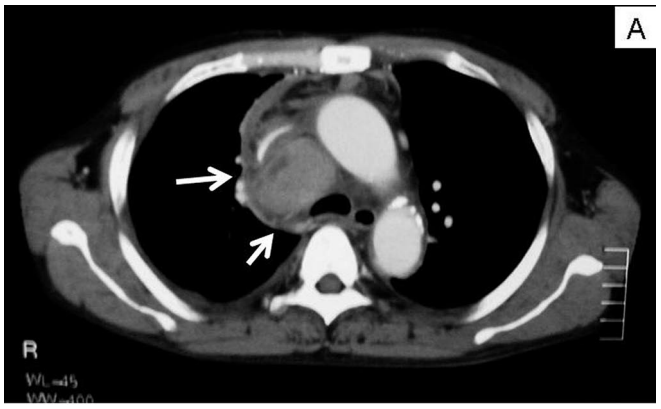

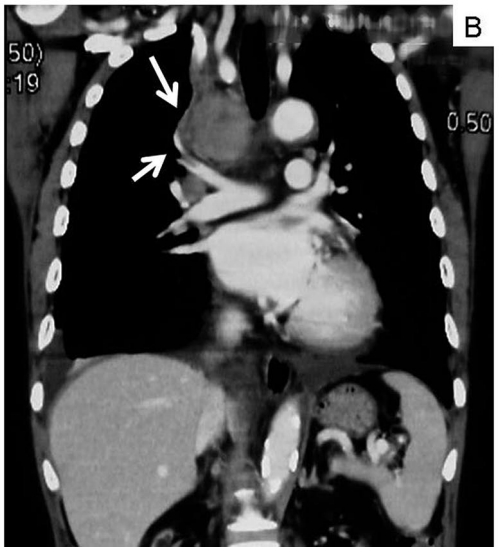

FIGURE 1. Computed tomographic scan demonstrates a large mass in the upper mediastinum (*arrows*). *A*, The superior vena cava is narrowing and has become crescent-shaped because of the mass, but no superior vena cava syndrome is seen. *B*, The mass is located among the superior vena cava, trachea, and ascending aorta.

surrounding the hematoma changing to a high-signal intensity area, as in the present case. The predisposition for our patient may have been the combination of renal failure, hemodialysis, and aspirin therapy.

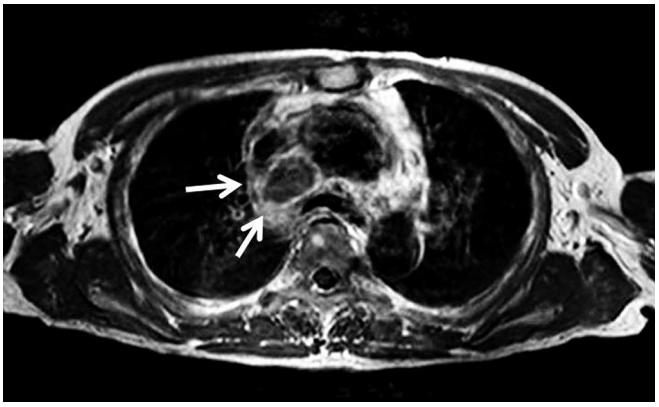

FIGURE 2. Magnetic resonance imaging. Mediastinal mass (*arrows*) had become slightly smaller 2 weeks later.

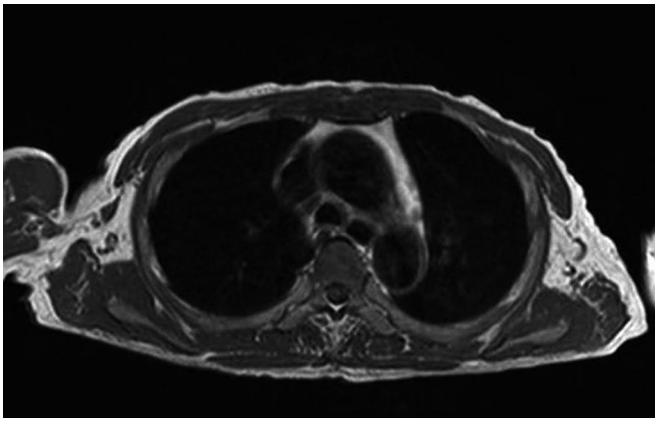

FIGURE 3. The mass and the pleural effusion had disappeared 1 year later.

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